

Applicants submit herewith a substitute sequence listing which corrects an administrative error in presenting the amino acid sequences set forth in SEQ ID Nos: 2, 4 and 6. In addition, Applicants have corrected the end of the coding portion of SEQ ID NO: 3. The corrections to sequences set forth in the substitute sequence listing find support in the specification and figures as originally filed (see, *inter alia*, Figures 1, 2, 3 and 4). No new matter has been added.

The Applicant reserves the right to prosecute, in one or more patent applications, the canceled claims, the claims to non-elected inventions, the claims as originally filed, and any other claims supported by the specification. Any amendments made to the claims herein were made solely to expedite and facilitate prosecution and were not made nor should they be construed to have been made to overcome any issue of unpatentability of the claims prior to amendment or in acquiescence of the Examiner's rejections to the claims.

Rejections under 35 U.S.C. § 112, first paragraph

Claims 3 – 5 and 9 – 11 were rejected under 35 U.S.C. § 112, first paragraph as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 3 – 5 and 9 - 11 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicants respectfully traverse the Examiner's rejections under 35 U.S.C. 112, first paragraph.

It is submitted that the rejections made by the Examiner with respect to the allegation that the amino acid sequences were 1412 amino acids in length are moot in light of the actual amino acid sequence lengths which are set forth in Figures 1, 2, 3 and 4 and in the specification. In particular, as shown in the figures, the nucleotide sequence from lettuce is 1981 base pairs with a corresponding protein length of 473 amino acids with the transit peptide and 348 amino acids without; the nucleotide sequence from tobacco is 1589 base pairs with a corresponding protein length of 478 amino acids with the transit peptide and 344 amino acids without; and the nucleotide sequence from arabidopsis is 1555 base pairs with a corresponding protein length of 462 amino acids with the transit peptide and 349 amino acids without. All of the proteins migrated with an approximate size of 43 kD.

As such, in light of the submission of the substitute sequence listing to accurately reflect the sequences set forth in the specification and figures as originally filed and in light of the arguments set forth above, it is respectfully submitted that the rejections under 35 U.S.C. 112, 1<sup>st</sup> paragraph are moot and should be withdrawn.

Rejections under 35 U.S.C. § 112, second paragraph

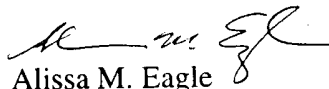
Claims 3 – 5 and 9 – 11 were rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 9 and 11 have been amended to address the issues raised by the Examiner. As such, it is respectfully requested that the rejections under 35 U.S.C. 112, second paragraph be withdrawn.

In light of the above arguments and amendments, it is submitted that all of the pending claims are in condition for full and complete allowance and therefore, such action is respectfully requested.

If there are any issues or amendments the Examiner wishes to discuss, she is encouraged to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

  
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**Marked Up Version of the Claims**

3. (Amended) An isolated DNA sequence comprising a nucleic acid sequence encoding a plant violaxanthin de-epoxidase protein joined to a heterologous promoter sequence, wherein said violaxanthin de-epoxidase protein has a molecular weight of approximately 43 kilodaltons [and wherein said violaxanthin de-epoxidase protein is recognized by a polyclonal antibody prepared against a peptide comprising the amino acid sequence VDALKTCACLLK (SEQ ID NO: 7)].

4. (Amended) A method of producing a plant or bacterial host cell with a modified level of [modifying] violaxanthin de-epoxidase [levels in a host cell] comprising growing a plant or bacterial host cell having a construct comprising, in the order of transcription, the DNA sequence of Claim 3, and a transcriptional termination region, wherein said promoter sequence comprises a plant transcription initiation region.

5. (Reiterated) The method of Claim 4 wherein said construct further comprises a translation initiation region and a plastid translocation sequence.

9. (Amended) A method of producing a plant with a modified level of [modifying] zeaxanthin [levels in a plant] comprising growing a plant having a construct comprising, in the order of transcription, the DNA sequence of Claim 3 and a transcriptional termination region, wherein said promoter sequence comprises a plant transcription initiation region.

10. (Reiterated) A plant, plant cell or other plant part comprising the DNA sequence of Claim 3.

11. (Amended) A plant or bacterial cell [plant, plant cell or plant part] produced by the method of any one of Claims 4 and 5 [,5 and 9].

16. (New) A plant produced by the method of claim 9.

17. (New) An isolated polynucleotide sequence comprising a sequence selected from the group consisting of nucleotides 235 to 1653 of SEQ ID

NO: 1; nucleotides 611 to 1653 of SEQ ID NO: 1; and nucleotides 235 to 610 of SEQ ID NO: 1.

18. (New) An isolated polynucleotide sequence comprising a sequence selected from the group consisting of nucleotides 42 to 1475 of SEQ ID NO: 3; nucleotides 445 to 1475 of SEQ ID NO: 3; and nucleotides 42 to 444 of SEQ ID NO: 3.
19. (New) An isolated polynucleotide sequence comprising a sequence selected from the group consisting of nucleotides 45 to 1430 of SEQ ID NO: 5; nucleotides 385 to 1430 of SEQ ID NO: 5; and nucleotides 45 to 384 of SEQ ID NO: 5.
20. (New) An isolated polynucleotide sequence comprising a sequence selected from the group consisting of a sequence encoding SEQ ID NO:2; a sequence encoding amino acids 1 to 125 of SEQ ID NO:2; and a sequence encoding amino acids 126 to 473 of SEQ ID NO:2.
21. (New) An isolated polynucleotide sequence comprising a sequence selected from the group consisting of a sequence encoding SEQ ID NO:4; a sequence encoding amino acids 1 to 134 of SEQ ID NO:4; and a sequence encoding amino acids 135 to 478 of SEQ ID NO:4.
22. (New) An isolated polynucleotide sequence comprising a sequence selected from the group consisting of a sequence encoding SEQ ID NO:6; a sequence encoding amino acids 1 to 113 of SEQ ID NO:6; and a sequence encoding amino acids 114 to 462 of SEQ ID NO:6.